

REMARKS

Claims 1-7 are pending in the present application.

At the outset, Applicants wish to thank Examiner Steele for the helpful and courteous discussion with their undersigned Representative on July 21, 2009. During this discussion several arguments were discussed including those that are reflected in the following remarks with respect to the alleged lack of written description and alleged obviousness. Applicants respectfully request reconsideration of the outstanding rejections in view of the following remarks.

The rejection of Claims 1-6 under 35 U.S.C. §112, first paragraph (written description – new matter), is respectfully traversed.

The Examiner continues to reject Claim 1 alleging that the added limitation does not have a basis in the original disclosure. In making this assertion, the Examiner states: “Any negative limitation or exclusionary proviso must have basis in the original disclosure. The mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. See *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff’d mem.*, 738 F.2d 453 (Fed. Cir. 1984).”

Specifically, the Examiner alleges that the limitation “wherein microfine fiber bundle (A) does not contain microfine fibers made of non-elastic polymers and that microfine fiber bundle (B) does not contain microfine fibers which have a single fiber fineness of 0.5 dtex or

less and which are made of an elastic polymer having a JIS A hardness of 90 to 97” is not recited in the specification and, thus, represents new matter.

On page 3 of the Office Action, the Examiner further alleges:

Where the microfine fiber-forming fiber (A') is described to be elastic and used to form the fiber bundle (A) and the microfine fiber-forming fiber (B') is non-elastic and used to form fiber bundle (B). However the specification continues to describe a process where the microfine fiber-forming fibers (A') and (B') are mixed or blended.

Bridging pages 3-4 of the Office Action, the Examiner alleges:

The description in the specification does not support the limitation that the microfine fiber bundles of (A) and (B) are made of exclusively (A') where (A') is elastic and (B') where (B') is non-elastic. The description describes a process where the microfine fiber-forming fibers are blended. The specification does not teach or disclose specifically that non-elastic polymers are not included in (A) and that microfine fibers which have a single fiber fineness of 0.5 dtex or less and which are made of elastic polymer are not in (B). While it is clear that microfine fiber-forming fiber (A') is an elastic polymer and microfine fiber-forming fiber (B') is a non-elastic polymer. The specification is not clear that (A') and (B') are not blended before becoming microfine fiber bundles (A) and (B). Therefore the current application can not be distinguished over the prior art. As the specification does not teach that (A') and (B') must not be blended in order to produce a fabric of unexpected results or improved characteristics, and the specification does not teach a specific embodiment as stated in claim 1, the claim limitation is considered subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this regard, there appears to be a basic misunderstanding by the Examiner. What are mixed or blended are the microfine fiber-forming fibers (A') and (B') and not the microfine fibers A and B. Mixing or blending the microfine fiber-forming fibers (A') and (B') cannot result in the mixing or blending of the microfine fibers A and B in the bundles of the microfine fibers A or the microfine fibers B.

Further, as set forth in the response filed on February 13, 2009, Applicants disagree with the Examiner's alleged lack of basis in the specification and remind the Examiner that the "lack of literal basis in the specification for a negative limitation may not be sufficient to establish a *prima facie* case for lack of descriptive support." *Ex parte Parks*, 30 USPQ2d 1234, 1236 (Bd. Pat. App. & Inter. 1993). Indeed, it is incumbent upon the Examiner to ascertain whether the negative limitation or proviso otherwise satisfies the written description requirement of 35 U.S.C. §112, first paragraph. Notably, the written description requirement may be met through an implicit disclosure.

Applicants again refer the Examiner to the Examples of the present specification and submit that the full scope of the claimed invention is supported thereby. Contrary to the Examiner's allegations during the discussion with the undersigned on July 21, 2009, support for the full scope of the claimed invention is, indeed, provided by the disclosure in the original specification. Specifically, Applicants direct the Examiner's attention to the disclosure at page 19, lines 20-22, which states:

"As described above, the microfine fiber-forming fibers (A') and (B') are converted into microfine fiber bundles (A) and (B) each *respectively* comprising the elastic microfine fiber and the non-elastic microfine fiber..."

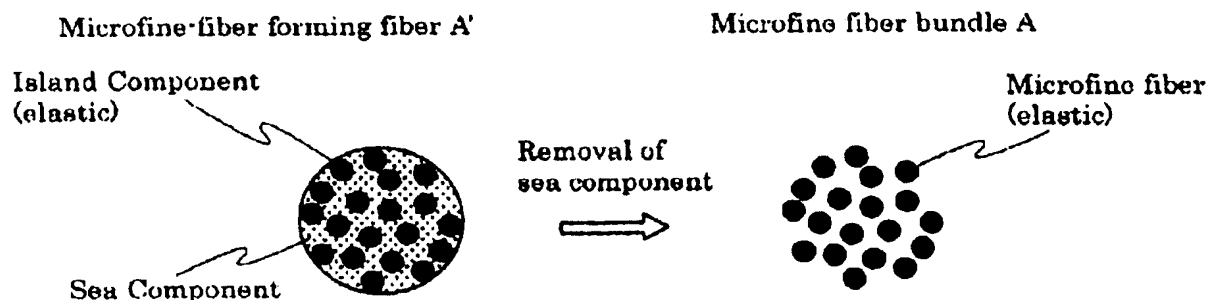
A similar passage appears at page 6, lines 10-13. Based on these sentences, the various sections describing the formation of the microfine fiber-forming fibers (A') and (B'), and the description of the removal of the sea component, Applicants submit that it is clear that the original specification clearly contemplated and described that microfine fiber bundle (A) does not contain microfine fibers made of non-elastic polymers and that microfine fiber bundle (B) does not contain microfine fibers made of elastic polymers. With respect to the limitation "microfine fibers which have a single fiber fineness of 0.5 dtex or less and which are made of an elastic polymer having a JIS A hardness of 90 to 97" Applicants direct the

Examiner to page 6, line 14 to page 8, line 24 and argued that these limitations are descriptive of the elastic polymer and are fully supported by the original disclosure.

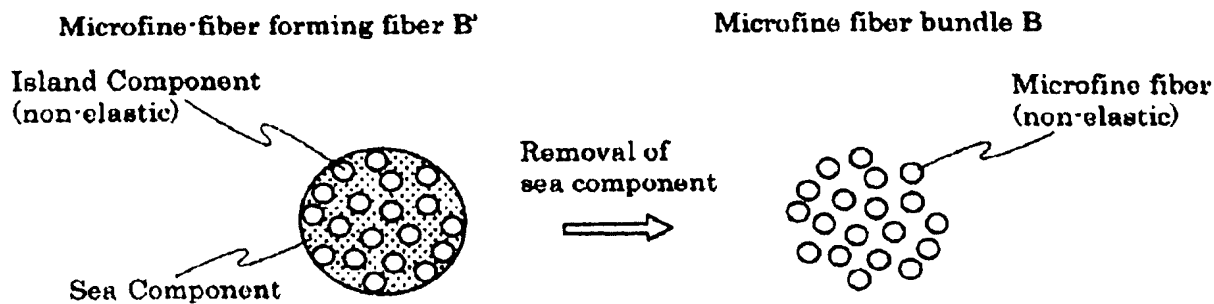
Further, to ensure that a complete explanation of support is provided, Applicants resubmit the following remarks that were presented in the response filed on February 13, 2009, and maintain that the Examiner's expressed opinion is contradictory to the actual teachings contained in the present application.

First, the production of the claimed leather-like sheet substance is schematically illustrated below with reference to Spinning Examples 1 and 5 and Example 1.

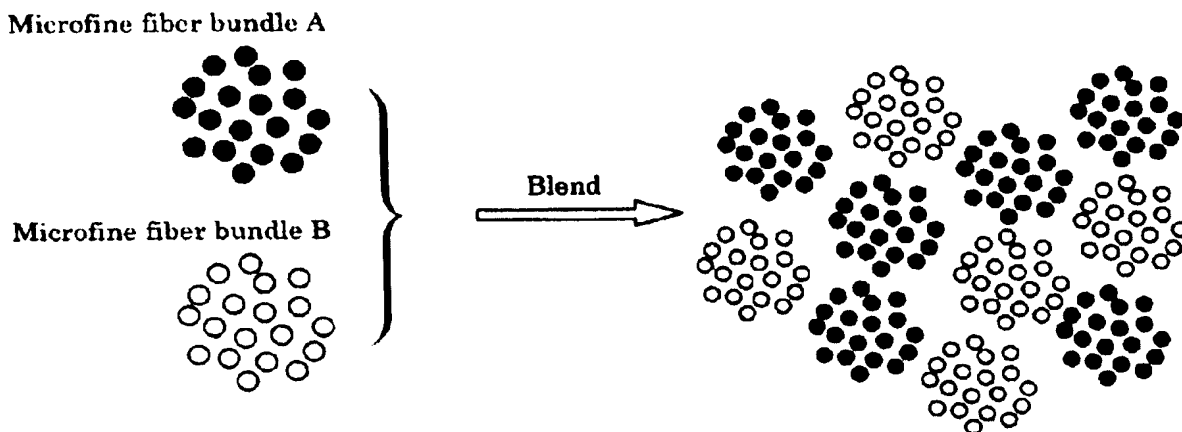
In Spinning Example 1 (see pages 22-23), the island component (polyurethane, elastic polymer) and the sea component (polyethylene) are spun into the microfine fiber-forming fibers A', which are then made into the microfine fiber bundles A by removing the sea component:



In Spinning Example 5 (see page 24), the island component (nylon 6, non-elastic polymer) and the sea component (polyethylene) are spun to the microfne fiber-forming fibers B', which are then made into the microfne fiber bundles B by removing the sea component:



In Example 1 (see pages 24-25), the microfibrillar bundles A and the microfibrillar bundles B obtained in Spinning Examples 1 and 5 are blended and finally made into the leather-like sheet substrate:

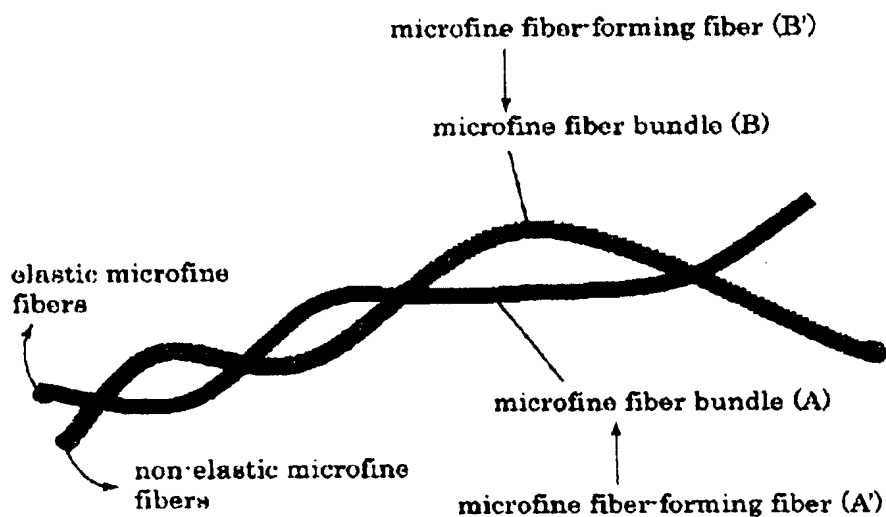


As is clearly evident from the foregoing illustrations, the microfibrillar bundle A cannot include the microfibrillar-forming fibers B', and the microfibrillar bundle B cannot include the microfibrillar-forming fibers A'.

It is clear from Spinning Example 1 that the island component for the microfibrillar-forming fibers A' is polyurethane (elastic polymer). Clearly, the island component does not contain the non-elastic polymer, and therefore, the resultant microfibrillar bundles A cannot include the non-elastic fibers. This is also true for Spinning Example 5. Again, the foregoing allegation by the Examiner is incorrect and is inconsistent with the Examples of the present application.

In Spinning Example 1, it is disclosed that the sea component was removed by extraction using toluene to convert the staples to microfine fibers. In the paragraph bridging pages 19 and 20 of the specification, it is disclosed that the microfine fiber-forming fibers A' are converted into microfine fiber bundles A by treating them with a liquid substance such as toluene. It would appear that the extraction of the sea component with toluene results in making bundles. In addition, Example 1 includes the disclosure that "the microfine fiber bundle derived from the microfine fiber-forming fiber of Spinning Example 1." Thus, Spinning Example 1 teaches making bundles. This is also true for Spinning Example 5. Again, the foregoing allegation by the Examiner is incorrect and is inconsistent with the Examples of the present application.

Moreover, in Spinning Example 1, as seen from the above schematic illustration, the microfine fiber-forming fibers A' are formed into the bundles before blending with the microfine fiber-forming fibers B' or the microfine fiber bundles B. Accordingly, the foregoing allegation by the Examiner is incorrect and is inconsistent with the Examples of the present application.



As illustrated above, a single microfine fiber bundle A includes plural elastic microfine fibers. The plural elastic microfine fibers are exposed to the left-hand cross-section and indicated by “elastic microfine fibers.” The plural elastic microfine fibers are bundled to form a single microfine fiber bundle (A) as indicated in the above drawing. Contrary to the Examiner’s prior allegations, the drawing is clear in that the bundle is not equated with fiber but the bundles includes plural fibers.

Applicants submit that the skilled artisan would reasonably and readily recognize that the specification clearly discloses, as discussed above (and further emphasized in the remarks with respect to Nakayama et al below), the limitation added to the pending Claim 1. Specifically, the specification properly provides support for the negative limitation “wherein microfine fiber bundle (A) does not contain microfine fibers made of non-elastic polymers and that microfine fiber bundle (B) does not contain microfine fibers which have a single fiber fineness of 0.5 dtex or less and which are made of an elastic polymer having a JIS A hardness of 90 to 97”.

Accordingly, Applicants request withdrawal of this ground of rejection.

The rejections of: (a) Claims 1 and 6 under 35 U.S.C. §102(e) over Nakayama et al - US (U.S. 6,767,853), (b) Claims 1 and 6 under 35 U.S.C. §102(b) over Nakayama et al - EP (EP 1067234); and (c) Claim 6 under 35 U.S.C. §102(b) over Nakayama et al - EP (EP 1067234), are traversed.

Again, Applicants note that Nakayama et al – EP is the European counterpart to Nakayama et al – US. Thus, these references suffer the same deficiencies with respect to the claimed invention, and these references are treated together in the discussion below.

Claim 1 of the present invention is drawn to

A leather-like sheet substrate comprising a fiber-entangled nonwoven fabric that comprises a microfine fiber bundle (A) and a microfine fiber bundle (B) in a blending ratio (A)/(B) of 30/70 to 70/30 by mass and a polymeric elastomer contained in the fiber-entangled nonwoven fabric, the microfine fiber bundle (A) comprising 10 to 100 microfine fibers each of which has a single fiber fineness of 0.5 dtex or less and which are made of an elastic polymer having a JIS A hardness of 90 to 97, and the microfine fiber bundle (B) comprising a microfine fiber which has a single fiber fineness of 0.5 dtex or less and which is made of a non-elastic polymer, wherein microfine fiber bundle (A) does not contain microfine fibers made of non-elastic polymers and that microfine fiber bundle (B) does not contain microfine fibers which have a single fiber fineness of 0.5 dtex or less and which are made of an elastic polymer having a JIS A hardness of 90 to 97.

For the reasons set forth above and incorporated herein by reference, Applicants submit that the limitation “wherein microfine fiber bundle (A) does not contain microfine fibers made of non-elastic polymers and that microfine fiber bundle (B) does not contain microfine fibers which have a single fiber fineness of 0.5 dtex or less and which are made of an elastic polymer having a JIS A hardness of 90 to 97” is supported by the specification and distinguishes the claimed invention from the disclosure of Nakayama et al – EP and Nakayama et al – US. Thus, the comments that follow reflect the invention including this limitation.



In the last paragraph of page 5 of the Office Action, the Examiner alleges:

Nakayama teaches a fibrous substrate for artificial leather comprising microfine fiber bundles of (A) and (B) where (A) is elastic and (B) is non-elastic. .... The elastic fibers (A), and bundles formed therefrom, are analogous to the claimed microfine bundles (A) comprising 10 to 100 microfine fibers.

In the first paragraph of page 6 of the Office Action, the Examiner alleges:

The prior art further teaches microfine fiber bundles (B) comprising inelastic polymer fibers (ABST). The fiber bundles (B) are analogous to the claimed microfine fiber bundle (B).

The Examiner's allegations in this regard are incorrect. Specifically, the bundles of of Nakayama et al – EP and Nakayama et al – US must contain both the elastic fibers and the non-elastic fibers. The Examiner states that the prior art teaches “microfine fiber bundles (B).” However, nowhere in of Nakayama et al – EP and Nakayama et al – US is the expression “microfine fiber bundles (B)” found. What is taught by of Nakayama et al – EP and Nakayama et al – US is “microfine fibers (A) and microfine fibers (B)” and not --bundles (A) and bundles (B)--. Applicants submit that the Examiner confuses the fibers with the bundles.

In the second paragraph of page 7 of the Office Action, the Examiner alleges:

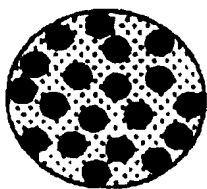
The Nakayama reference teaches a fibrous substrate for artificial leather, comprising microfine fiber bundles of elastic fibers (A) and a microfine fiber bundles of nonelastic fibers (B). The weight ratio of (A) to (B) bundles is 10/90-60/40.

However, of Nakayama et al – EP and Nakayama et al – US neither disclose the microfine fiber bundles (A) nor the microfine fiber bundles (B). What is taught by of Nakayama et al – EP and Nakayama et al – US is the microfine fiber bundles each comprising microfine fibers (A) of an elastic polymer and microfine fibers (B) of a non-elastic polymer. The Examiner indicates that the weight ratio of (A) and (B) bundles is 10/90-60/40. However, what is taught by of Nakayama et al – EP and Nakayama et al – US

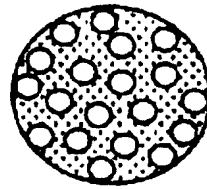
is “the weight ratio of the A to the B in the bundles,” i.e., the weight ratio of the elastic microfine fibers A to the non-elastic microfine fibers B in bundles, and not the ratio of bundles as alleged by the Examiner. Clearly, the Examiner’s allegations based on the disclosures of Nakayama et al – EP and Nakayama et al – US are inaccurate and, thus, the conclusions as to anticipation are without merit.

To ensure clarity of the record and of the claimed invention, Applicants again submit that from the text of Claim 1 it is clear that the claimed leather-like sheet substrate is composed of *two kinds* of fiber bundles: the elastic fiber bundle (A) made of elastic microfine fibers and the non-elastic fiber bundle (B) made of non-elastic microfine fibers. The elastic fiber bundle A is formed from the microfine fiber-forming fiber A' which contains an elastic polymer as the island component (page 16, lines 9-12). The non-elastic fiber bundle B is formed from the microfine fiber-forming fiber B' which contains a non-elastic polymer as the island component (page 16, lines 26-27). Therefore, the claimed elastic fiber bundle (A) and non-elastic fiber bundle (B) could be illustrated as follows:

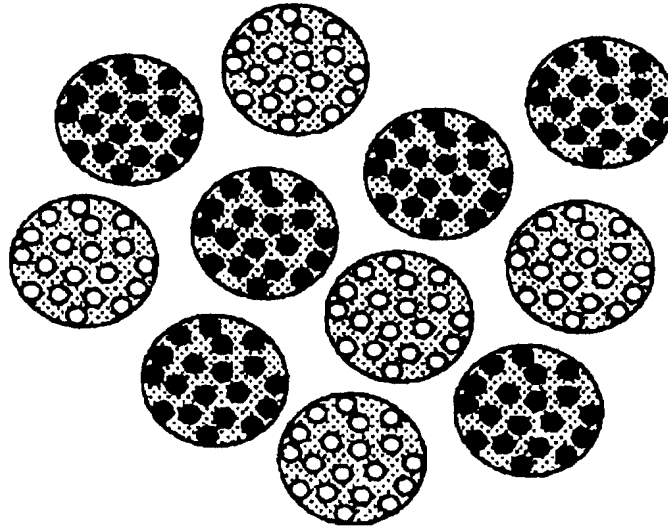
**Microfine-fiber forming fiber A'**



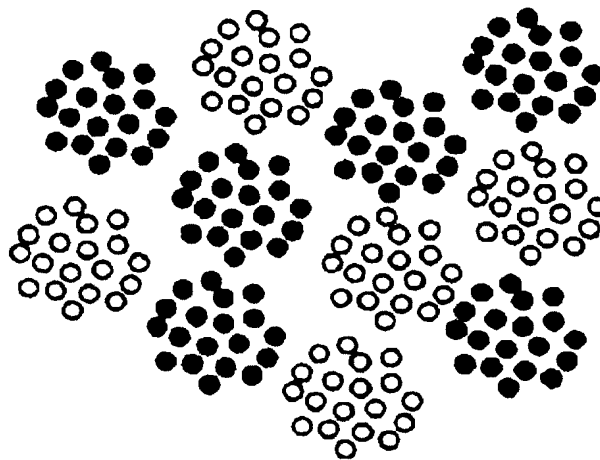
**Microfine-fiber forming fiber B'**



By blending the microfine fiber-forming fibers A' and B', the following structure is obtained, in which A' does not contain B' and B' does not contain A'.

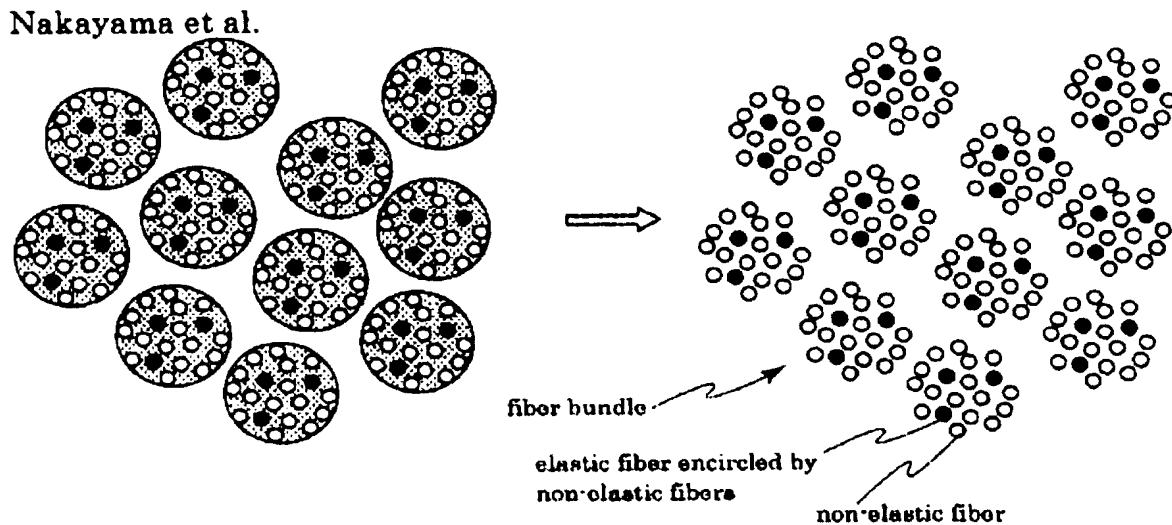


Then, the sea component of the microfine fiber-forming fibers A' and B' are removed to obtain the following structure of a mixture of the microfine fiber bundles A and the microfine fiber bundles B, in which the bundle A does not contain the non-elastic microfine fibers and the bundle B does not contain the elastic microfine fibers.



Applicants submit that the specification is clear in that the bundles do not contain a mixture of A and B and are well distinguished from the fiber bundles disclosed in Nakayama et al – EP and Nakayama et al – US. In contrast to the claimed invention, *each fiber bundle* of disclosed in Nakayama et al – EP and Nakayama et al – US is composed of elastic fibers A

and non-elastic fibers B, in which each elastic fiber A is encircled by the non-elastic fibers B (column 3, lines 28-45; column 4, lines 7-9; etc.). Therefore, the fiber bundle disclosed in Nakayama et al – EP and Nakayama et al – US could be illustrated more succinctly as follows:



Indeed, the fiber bundle disclosed in Nakayama et al – EP and Nakayama et al – US is formed from a microfine fiber-forming fiber which contains both an elastic polymer and a non-elastic polymer (Example 1, etc.). Therefore, a single fiber bundle disclosed in Nakayama et al – EP and Nakayama et al – US contains both the elastic microfine fibers and the non-elastic microfine fibers. In fact, in each fiber bundle of disclosed in Nakayama et al – EP and Nakayama et al – US, each elastic fiber A is required to be encircled by the non-elastic fibers B. Again, the Examiner is reminded that in the presently claimed invention each elastic fiber is encircled by other elastic fibers in each of the claimed elastic fiber bundles (A).

Accordingly, for the reasons set forth above, Applicants request withdrawal of the anticipation rejections over the disclosures of Nakayama et al – EP and Nakayama et al – US.

The rejections of: (a) Claims 1 and 6 under 35 U.S.C. §103(a) over Nakayama et al - US (U.S. 6,767,853), (b) Claims 1 and 6 35 U.S.C. §103(a) over Nakayama et al - EP (EP 1067234); (c) Claims 1 and 6 under 35 U.S.C. §103(a) over Nakayama et al - EP (EP 1067234) in view of Yamakawa (US 6,784,127); (d) Claims 2-5 over Nakayama et al - EP (EP 1067234) in view of Yamakawa (US 6,784,127); and Kato et al (US 4,476,186); (e) Claim 3 under 35 U.S.C. §103(a) over Nakayama et al - EP (EP 1067234) in view of Yamakawa (US 6,784,127) in view of Minami et al, are respectfully traversed.

As discussed above, the present invention and Nakayama et al – EP and Nakayama et al – US are clearly distinguished from each other at least in the structures of fiber bundles. The Examiner cites Minami et al and Kato et al as showing the incorporation of powder into the entangled nonwoven substrate is known. Yamakawa is cited as disclosing a synthetic leather comprising a polyurethane elastomer fiber having a Shore hardness A of 92 or more. Yamakawa is then somehow relied upon to allegedly provide motivation to use elastomeric polymers are known in the art to be comprised of hard and soft segments.

Applicants make no statement with respect to the alleged disclosures of Minami et al and Kato et al (Yamakawa is discussed below) but note that each of these references, including Yamakawa, is completely silent about the specifically claimed elastic fiber bundle (A) and non-elastic fiber bundle (B) described above. As such, Minami et al, Kato et al, and Yamakawa fail to remedy the basic deficiency of Nakayama et al – EP and Nakayama et al – US. Therefore, even if the skilled artisan were to combine the disclosure of Nakayama et al – EP and Nakayama et al – US with either Minami et al, Kato et al, and Yamakawa the present invention would still not be apparent or obvious.

Applicants further submit the following specific remarks in relation to several allegations made by the Examiner in the outstanding Office Action:

In the penultimate paragraph of page 9, the Examiner repeats that:

The Nakayama reference teaches a fibrous substrate for artificial leather, comprising microfine fiber bundles of elastic fibers (A) and a microfine fiber bundles of nonelastic fibers (B). The weight ratio of (A) to (B) bundles is 10/90-60/40.

As noted above, the Examiner's reasoning is based on what is not taught by Nakayama et al – EP and Nakayama et al – US. Indeed, Nakayama et al – EP and Nakayama et al – US neither disclose the microfine fiber bundles (A) nor the microfine fiber bundles (B). What is taught by of Nakayama et al – EP and Nakayama et al – US is the microfine fiber bundles each comprising microfine fibers (A) of an elastic polymer and microfine fibers (B) of a non-elastic polymer. The Examiner indicates that the weight ratio of (A) and (B) bundles is 10/90-60/40. However, what is taught by of Nakayama et al – EP and Nakayama et al – US is “the weight ratio of the A to the B in the bundles,” i.e., the weight ratio of the elastic microfine fibers A to the non-elastic microfine fibers B in bundles, and not the ratio of bundles as alleged by the Examiner. Clearly, the Examiner's allegations based on the disclosures of Nakayama et al – EP and Nakayama et al – US are inaccurate.

In the third paragraph of page 10 of the Office Action, the Examiner alleges:

Nakayama teaches that it is known in prior art to employ fiber bundles of elastic polymers and fiber bundles of non-elastic polymers separately made into fiber bundles which meets the claim limitation that bundles (A) do not contain the polymers of bundles (B) and conversely (B) bundles do not contain (A) fibers [0005] (sic, [0004]).

In [0004], line 8, Nakayama et al – US discloses that the fineness of the elastic polymer that can be industrially produced exceeds 2 deniers. The fineness of 2 deniers is extremely larger than 0.5 dtex or less defined in the present claim 1 ( $2\text{ D} = 2/9\text{ tex} = 20/9\text{ dtex}$ ). Therefore, the combination of the fiber bundles of elastic polymers and fiber bundles of non-elastic polymers taught in [0004] is clearly distinguished from the claimed invention.

In paragraph 8 of page 16 of the Office Action, the Examiner alleges:

Examiner maintains that the specification as disclosed does not teach that A does not contain B and B does not contain A. Applicant's specification teaches A' fiber-forming fibers and B' fiber-forming fibers and teaches these fibers can be blended.

Again, the Examiner misunderstands the claimed invention. For example, in Spinning Example 1 the fiber bundle A is derived from the microfine fiber-forming fibers (A') consisting of polyurethane (island component) and polyethylene (sea component), and in Spinning Example 5 the fiber bundle B is derived from the microfine fiber-forming fibers (B') consisting of nylon 6 (island component) and polyethylene (sea component). Clearly, the bundle A consists of polyurethane microfine fibers (elastic fibers) and the bundle B consists of nylon 6 microfine fibers (non-elastic fibers). It would appear that the Examiner confuses the mixing of the microfine fiber-forming fibers (A') and (B') with the mixing of the microfine fibers (A) and (B) in the bundles.

In paragraph 9 of page 16 of the Office Action, the Examiner alleges:

The use of the terms bundles (A) and microfibers A' and bundles (B) of microfibers B' requires a careful analysis of what (A) and A' and (B) and B' are comprised of and are considered of broad scope and one of the reasons that the 35 USC 112 1st paragraph rejection is maintained.

The terms "microfibers A'" and "microfibers B'" are not used in the specification. Thus, it appears that Examiner misinterprets the microfine fiber-forming fibers (A') and (B') as microfine fibers A' and microfine fibers B'.

The microfine fiber-forming fibers (A') and (B') can be produced by a known sea/island composite spinning method (page 9, lines 22–23, and page 10, lines 25–26). Thus, each of the microfine fiber-forming fibers (A') and (B') is made of a sea component to be removed and an island component to form the microfine fibers. The bundle (A) is formed

from 10 to 100 elastic microfine single fibers (page 8, lines 17–18). The bundle (B) is formed from the microfine fiber-forming fiber (B') by removing the sea component (paragraph bridging pages 19 and 20). Therefore, it would be clear what (A) and A' and (B) and B' are comprised of and there would be no need to carefully analyze.

Then, the Examiner compares the examples and embodiments. Specifically, on page 17 of the Office Action, the Examiner sets forth a Table with a column entitled "Fiber per bundle" and indicates "Not in example" for Spinning Examples 1–5. This is not correct, because the number of islands ("fibers per bundle") is provided in Spinning Examples 1–5 as shown below.

	Spinning Examples				
	1	2	3	4	5
Number of islands	25	25	25	300	600

On page 20, line 3 et seq. of the Office Action, the Examiner alleges:

However only examples produced with the 95 and 93 JIS A hardness are disclosed to have good results. Applicant's claim 1 is broad in scope compared to the disclosure of the examples.

Applicants disagree with this position by the Examiner and submit that examples cover 93 to 95 JIS A hardness are a reasonable exemplification of the claimed range of 90 to 97 JIS A hardness. The Examiner offers no basis to support any allegation that these data are insufficient and/or that the artisan cannot reasonably expect the demonstrated benefits in the range of 93 to 95 JIS A hardness to exist throughout the entire claimed range of 90 to 97 JIS A hardness.

On page 20, line 9 et seq. of the Office Action, the Examiner alleges:

Further, it appears that the spinning example produced with a polyurethane elastomer with a JIS A hardness of 97 which is employed to produce comparative example 2, does not have the desirable results of finished nonwoven examples 1 and 2. While the desired results are not claimed, it would appear that the Applicant does not have support



for selecting polyurethane elastomers of a specific range of JIS A hardness.

Applicants disagree and direct the Examiner's attention to the table above in which it is clearly shown that in comparative example 2, the number of islands, i.e., the number of fibers per bundle is 300 which is outside the claimed range of 1 to 100.

Despite the foregoing, during the discussion of July 21, 2009, with the undersigned, the Examiner alleged that there is nothing unobvious about separating the elastic microfine fibers into microfine fiber bundle (A) and the non-elastic microfine fibers into microfine fiber bundle (B). Specifically, the Examiner alleged that the skilled artisan would appreciate that so doing would avoid sticking together of the respective fibers which would in turn result in increased mechanical strength and extension elastic recovery of the resultant leather-like sheet substrate.

To address this allegation, Applicants provide the following additional traversal. In column 1, line 48 et seq., Nakayama (referenced as Nakayama et al – US, but equally applicable to Nakayama et al – EP and Nakayama et al – US) discloses that the production of a leather-like sheet by blending sea-island type, elastic microfine fiber-forming fibers with non-elastic fibers to prepare a nonwoven fabric, and then removing the sea component of the sea-island type microfine fiber-forming fibers to generate elastic microfine fibers is known in the art.

In the paragraph bridging columns 1 and 2, Nakayama disclose:

In these methods, pieces of the elastic polymer, which is the island component, agglutinate to each other to be bundled/integrated by treatment with the solvent upon extraction and removal of the sea component, even if the microfibers comprising the elastic polymer are made sufficiently fine at the stage of the microfine fiber-forming fibers. Finally, a single thick fiber is produced. For this reason, the fineness of the elastic polymer that can be industrially produced exceeds 2 deniers. The elastic polymer and the non-elastic polymer are separately made into fiber bundles, so that only a part of the microfine

fibers comprising the non-elastic polymer is bound with the elastic polymer. Thus, large parts of fibers comprising the non-elastic polymer are in a loose state. As a result, many of the microfine fibers are not bound and easily fall out from the leather-like sheet.

Thus, Nakayama disclose that the elastic fiber having a fineness of less than 2 deniers (2.2 dtex) is difficult to obtain from the sea-island type, elastic microfine fiber-forming fibers which correspond to the claimed microfine fiber-forming fibers A'.

To solve this problem, Nakayama proposes the microfine fiber bundles in which the microfine non-elastic fibers B encircle the microfine elastic fibers A, which are formed from microfine fiber-forming fiber containing both the elastic and non-elastic fiber-forming components (see column 2, line 56 to column 3, line 45).

Clearly, Nakayama teaches away from producing elastic microfine fibers from the microfine fiber-forming fibers which contain *only* the elastic fiber-forming component.

Thus, the Examiner's allegation: "the skilled artisan would appreciate that so doing would avoid sticking together of the respective fibers which would in turn result in increased mechanical strength and extension elastic recovery of the resultant leather-like sheet substrate" is contrary to the disclosure of Nakayama.

In the present invention, however, the bundles A of elastic microfine fibers each having a fineness of 0.5 dtex or less (extremely thinner than 2.2 dtex as taught by Nakayama) are successfully formed from the microfine fiber-forming fibers A' which contain *only* the elastic fiber-forming component. Thus, the present invention has solved the problem in a manner different from that employed in Nakayama.

Specifically, the present invention is based on using an elastic polymer having a JIS A hardness of 90 to 97 and controlling the number of elastic microfine fibers in each bundle A within 10 to 100 (see paragraph bridging pages 3 and 4, paragraph bridging pages 7 and 8, and paragraph bridging pages 8 and 9). As discussed above, the present invention has solved

the problem by using the microfine fiber-forming fibers which contain only the elastic fiber-forming component, i.e., by using the microfine fiber-forming fibers which are taught by Nakayama to produce thick fibers having a fineness exceeding 2 deniers. Therefore, the result obtained by the present invention cannot be expected from Nakayama.

Yamakawa disclose the use of a thermoplastic polyurethane elastomer having Shore hardness A of 92 or more. As noted above, in the present invention the problem of the sticking of elastic microfine fibers is solved by using an elastic polymer having a JIS A hardness of 90 to 97 and controlling the number of microfine fibers in the bundle A within 10 to 100.

The fineness of elastic microfine fibers, the number of elastic microfine fibers in each bundle A, JIS A hardness, and the results of Examples 1-2 and Comparative Examples 1-2 in the specification are reproduced in the following table.

	Fineness (dtex)	Fiber per bundle	Hardness	Result
Examples				
1	0.08	25	95	polyurethane microfine fibers partially stuck together
2	0.08	25	93	polyurethane microfine fibers partially stuck together where the powder was not present
Comparative Examples				
1	0.08	25	85	polyurethane microfine fibers excessively stuck together to be integrated into a single thick fiber
2	0.007	300	97	polyurethane microfine fibers excessively stuck together to be integrated into a single thick fiber

Upon comparing Example 1 and Comparative Example 1, the hardness of the claimed range is necessary to prevent the excessive sticking of elastic fibers. If the hardness is outside

the claimed range, the resultant fibers are excessively stuck together to form a single thick fiber even when the number of fibers per bundle is within the claimed range.

Comparative Example 2 shows that the excessive sticking cannot be avoided even when the hardness is within the claimed range, if the number of fibers per bundle is outside the claimed range. Thus, the effect of preventing the sticking is attributable to the combination of the specific range of hardness and the limited number of elastic microfine fibers in each bundle A.

Yamakawa discloses a nonwoven fabric comprising polyurethane elastic filaments which are mutually fused and bonded (column 1, lines 54-57). The diameter of the filaments is about 5 to 50  $\mu\text{m}$  (column 4, line 64-67) which is extremely larger than the claimed fineness of 0.5 dtex or less.

Yamakawa merely disclose that a Shore A hardness of not less than 92 enhances the strength of the filaments (column 2, lines 16-20), but does not disclose anything about the effect of the Shore A hardness on preventing the sticking of elastic microfine fibers. In fact, Yamakawa teaches that the most effective method of controlling the mutual bonding force between the filaments is to control the depositing point temperature (column 4, lines 11-16).

Therefore, when referring to Yamakawa the artisan would find no disclosure, suggestion, or reasonable motivation to prevent the sticking of elastic microfine fibers by using an elastic polymer having a specific JIS A hardness. Also, it should be noted that Yamakawa relates to fuse-bonding the polyurethane fibers rather than to preventing the sticking of the polyurethane fibers.

Moreover, Yamakawa is completely silent about elastic microfine fibers and bundles thereof. Clearly, the prevention of the sticking of elastic microfine fibers by controlling the number of elastic microfine fibers in each bundle A is not disclose or suggested by

Yamakawa. Therefore, the effect of the present invention on preventing the sticking of microfine elastic fibers by the combination of the use of an elastic polymer having a JIS A hardness of 90 to 97 and the control of the number of elastic microfine fibers in each bundle A within 10 to 100 cannot be expected from Nakayama et al – EP and Nakayama et al – US with Yamakawa.

Again, Applicants submit that the claimed invention is not obvious in view of Nakayama et al – EP and Nakayama et al – US with either Minami et al, Kato et al, and Yamakawa.

In view of the foregoing, Applicants request withdrawal of these grounds of rejection.

The rejection of Claims 1, 2, and 4-6 under the doctrine of obviousness-type double patenting over Claim 1 and 5 of Nakayama et al - US (U.S. 6,767,853) is respectfully traversed.

Applicants refer the Examiner to the discussion above with respect to the differences in the structure defined in the leather-like sheet substrate of the claimed invention and the fibrous substrate defined in Nakayama et al – US. Applicants contend that when the claims and the support offered in the present specification for the limitation “wherein microfine fiber bundle (A) does not contain microfine fibers made of non-elastic polymers and that microfine fiber bundle (B) does not contain microfine fibers which have a single fiber fineness of 0.5 dtex or less and which are made of an elastic polymer having a JIS A hardness of 90 to 97” is properly considered, the claimed invention is clearly distinct from that disclosed and claimed in Nakayama et al – US.

Accordingly, for the reasons given above in traversal of the anticipation rejection over Nakayama et al – US, the claimed invention is not anticipated by or obvious in view of the claims of Nakayama et al – US.

In view of the foregoing, Applicants submit that this ground of rejection should be withdrawn. Acknowledgement to this effect is requested.

Finally, with respect to the non-elected method claims, Applicants remind the Examiner of MPEP §821.04. Accordingly, upon a finding of allowability of the elected product claims, Applicants respectfully request rejoinder of the withdrawn process claims that depend therefrom.

Applicants submit that the present application is now in condition for allowance. Early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.  
Norman F. Oblon



Vincent K. Shier  
Registration No. 50,552

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413-2220  
(OSMMN 08/03)